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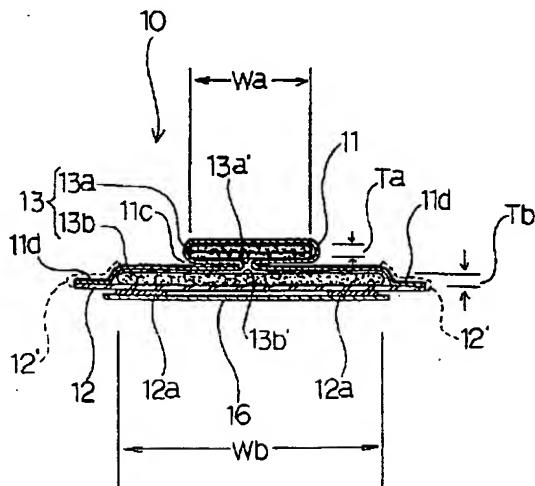
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(54) 【発明の名称】 吸収性物品

(57) 【要約】

【課題】 着用時に動作に影響されることなく良好なフィット性が保持され、液吸収容量の大きい吸収性物品を提供すること。

【解決手段】 装着者に当接される液透過性の表面シート11、液不透過性の裏面シート12、及び該表面シート11と該裏面シート12との間に介在された液保持性の吸収部13を有する吸収性物品10であって、上記吸収部13は、上層吸収体13aと、該上層吸収体13aの非肌当接面側に配設された下層吸収体13bとを備え、該上層吸収体13aは、該下層吸収体13bと独立して形成され且つ該下層吸収体13bと実質的に非接触状態に配設され、上記下層吸収体13bに対して幅方向に位相変化自在に、表面シート11により被覆されている。



【特許請求の範囲】

【請求項1】 裝着者に当接される液透過性の表面シート、液不透過性の裏面シート、及び該表面シートと該裏面シートとの間に介在された液保持性の吸収部を有する吸収性物品において、

上記吸収部は、上層吸収体と、該上層吸収体の非肌当接面側に配設された下層吸収体とを備え、該上層吸収体は、該下層吸収体と独立して形成され且つ該下層吸収体と実質的に非接触状態に配設され、上記下層吸収体に対して幅方向又は長手方向に位相変化自在に、上記表面シートにより被覆されていることを特徴とする吸収性物品。

【請求項2】 上記上層吸収体における上記下層吸収体側の幅方向中央部又は長手方向中央部を除く表面、及び上記下層吸収体における上記上層吸収体側の幅方向中央部又は長手方向中央部を除く上記上層吸収体側の表面が上記表面シートにより被覆されており、該表面シートは1枚の連続したシートからなっていることを特徴とする請求項1に記載の吸収性物品。

【請求項3】 上記表面シートは、吸収性物品の幅方向における200%伸長時の応力が200~2000gであり、幅方向における永久歪みが70%以下であることを特徴とする請求項1又は請求項2に記載の吸収性物品。

【請求項4】 上記上層吸収体の幅は、上記下層吸収体の幅の20~80%であることを特徴とする請求項1乃至請求項3のうちのいずれかに記載の吸収性物品。

【請求項5】 上記上層吸収体は、吸収シートを備えていることを特徴とする請求項1乃至請求項4のうちのいずれかに記載の吸収性物品。

【請求項6】 上記吸収シートは、紙又は不織布間に高吸収性ポリマーを層状に介在させたシート、若しくは、親水性纖維と高吸収性ポリマー及びバインダーを混合してシート状に形成したものであることを特徴とする請求項5に記載の吸収性物品。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、生理用ナプキンや使い捨ておむつ、失禁者用パッド、外科用パッド等の、液透過性の表面層、液不透過性の裏面層、及び該表面層と該裏面層との間に介在された液保持性の吸収部を有する吸収性物品に関し、更に詳しくは、装着時に装着者の動作に影響されることなく良好なフィット性が保持され、液吸収容量の大きい吸収性物品に関する。

【0002】

【従来の技術及び発明が解決しようとする課題】一般に、生理用ナプキンや使い捨ておむつ等の吸収性物品として、液透過性の表面シート、液不透過性の裏面シート、及び該表面シートと該裏面シートとの間に介在された液保持性の吸収部を有する吸収性物品はよく知られて

いる。この様な吸収性物品は、血液、尿等の体液の漏出部分に良好にフィットし、漏れなく吸収及び保持できることが要求される。

【0003】血液、尿等の体液の漏出部分に良好にフィットし、漏れなく吸収及び保持できる吸収性物品として、従来より、吸収部を、下層吸収体と、該下層吸収体よりも幅狭の上層吸収体とにより構成し、装着者の当接部に合った形状で当接することによりズレを回避するとともに幅方向中央部における液吸収容量を増加させたものが知られている。このような、吸収部を上下2層の構造とした吸収性物品としては、特公平5-73419号公報に記載のものや、実開平5-24025号公報に記載のものがある。特公平5-73419号公報に記載の吸収性物品では、上層吸収体と下層吸収体とは個別に表面シートにより被覆され、長手方向両端部において互いに固定されている。実開平5-24025号公報に記載の吸収性物品では、上層吸収体と下層吸収体とは個別に表面シートにより被覆され、長手方向両端部及び長手方向中央部において接着固定されている。

【0004】しかし、上述のような吸収性物品では、以下のようないくつかの問題点がある。即ち、特公平5-73419号公報に記載の吸収性物品では、装着者の動作により、長手方向中央部において上層吸収体と下層吸収体との幅方向の相対的位置がずれてそのまま戻らず、体液が偏って吸収・分布されて漏れを生じる場合がある。実開平5-24025号公報に記載の吸収性物品では、上層吸収体と下層吸収体とが一体となっているために、装着者の動作が激しい場合には、吸収体全体がずれてしまい、漏れを生じるおそれがある。

【0005】従って、本発明の目的は、装着時に装着者の動作に影響されることなく良好なフィット性が保持され、液吸収容量の大きい吸収性物品を提供することにある。

【0006】

【課題を解決するための手段】本発明は、装着者に当接される液透過性の表面シート、液不透過性の裏面シート、及び該表面シートと該裏面シートとの間に介在された液保持性の吸収部を有する吸収性物品において、上記吸収部は、上層吸収体と、該上層吸収体の非肌当接面側に配設された下層吸収体とを備え、該上層吸収体は、該下層吸収体と独立して形成され且つ該下層吸収体と実質的に非接触状態に配設され、上記下層吸収体に対して幅方向又は長手方向に位相変化自在に、上記表面シートにより被覆されていることを特徴とする吸収性物品を提供することにより、上記目的を達成したものである。

【0007】

【発明の実施の形態】以下、本発明の吸収性物品の実施形態を図面を参考しながら具体的に説明する。図1は、本発明の吸収性物品の第1の実施形態としての生理用ナプキンを示す斜視図、図2は図1の生理用ナプキンの幅

方向断面図である。

【0008】本実施形態の生理用ナプキン10は、装着者に当接される液透過性の表面シート11、液不透過性の裏面シート12、及び該表面シート11と該裏面シート12との間に介在された液保持性の吸收部13を有する。この構成については従来の公知技術と同じである。

【0009】而して、本実施形態の生理用ナプキン10では、図1又は図2に示すように、上記吸收部13は、上層吸收体13aと、該上層吸收体13aの非肌当接面側に配設された下層吸收体13bとを備え、該上層吸收体13aは、該下層吸收体13bと独立して形成され且つ該下層吸收体13bと実質的に非接触状態に配設され、上記下層吸收体13bに対して幅方向又は長手方向に位相変化自在に、上記表面シート11により被覆されている。

【0010】本実施形態について詳述すると、上記上層吸收体13aは、2枚の吸收シートを重ねて2層に形成されている。下層吸收体13bは、1枚の吸收シートにより1層に形成されている。

【0011】また、表面シート11は、その略中央部が上層吸收体13aに当接されており、更に上記上層吸收体13aの左右両側縁に沿って上記上層吸收体13aと下層吸收体13bとの間に折り込まれて、上層吸收体13aにおける下層吸收体13b側の幅方向中央部13a'を除く表面を被覆している。この表面シート11は、上層吸收体13aと下層吸收体13bとの間において折り返されて連設部11cが形成されており、上層吸收体13aと下層吸收体13bとは、この連設部11cを介して実質的に非接触状態に配設されている。更に表面シート11は、連設部11cから側縁部11d、11dにかけてが下層吸收体13bにおける上層吸收体13a側の表面に面接され、下層吸收体13bにおける上層吸收体13a側の幅方向中央部13b'を除く上層吸收体13a側の表面を被覆している。尚、上層吸收体13aと下層吸收体13bとが「実質的に非接触状態に配設されている」とは、上層吸收体13aの下層吸收体13bに対する位相変化を妨げない程度に非接触状態であることをいい、例えば、上層吸收体13aの中央部が垂下変形して下層吸收体13bと一部接触する場合等は実質的に非接触状態であるうちに含まれる。

【0012】そして、下層吸收体13bは裏面シート12に接着固定されており、下層吸收体13bの周囲において、表面シート11と裏面シート12とが固着されている。生理用ナプキン10の縁端部においては、表面シート11は折曲状態のまま裏面シート12に固着されている。また裏面シート12には、その外側面に、粘着剤を塗布することにより長手方向に2本の粘着部12a、12aが形成され、この粘着部12a、12aは剥離紙16により被覆されており、生理用ナプキン10装着直前に剥離紙16を剥離して粘着部12a、12aを露出

し衣類に粘着させるようになっている。

【0013】上記上層吸收体13aは、その幅W_aが下層吸收体13bの幅W_bの20~80%であることが好ましく、30~70%であることがより好ましい。20%未満では装着者の体液の漏出部からズレるおそれがあり、80%超では漏出部に対するフィット性を損なうおそれがある。また、上層吸收体13aの長さL_aは下層吸收体13bの長さL_bの20~100%であることが好ましい。20%未満では装着者の体液の漏出部からズレるおそれがある。更に、上層吸收体13aの厚みT_aは0.3~10mmであることが好ましく、0.5~6mmであることがより好ましい。上層吸收体13aが装着者に違和感なく確実に当接され且つ充分な液吸収容量を発揮するからである。

【0014】上記上層吸收体13a及び下層吸收体13bを形成する材料としては、フラッフパルプ、高吸収性ポリマー、紙、不織布等を特に制限なく使用する事ができるが、よりヨレ難く、吸収性の高い吸収性物品を得る為に厚み0.3~5mmの吸收シートを少なくとも含んでなる事が好ましい。厚み0.3mm未満ではヨレ易く、5mm超では剛性が大き過ぎ装着者に違和感を与える。また、図1に示す第1の実施形態では、上層吸收体13aは、厚み0.3~5mmの吸收シートを2枚重ねて2層に形成されており、下層吸收体13bは、厚み0.3~5mmの吸收シート1枚で1層に形成されている。

【0015】上記上層吸收体13a及び下層吸收体13bを形成する吸收シートとしては、吸収紙や不織布、纖維をバインダー等でシート化したバルブシート、フラッフパルプ、及び纖維に高吸収性ポリマーを混合してシート状に形成したもの等のシートを用いることができ、加工性及び良好な液体吸収量を得られる点から、纖維に高吸収性ポリマーを混合してシート状に形成したものが好ましい。尚、纖維に高吸収性ポリマーを混合してシート状に形成したものとしては、紙又は不織布間に高吸収性ポリマーが層状に分散されたもの、親水性纖維と高吸収性ポリマー及びバインダーを混合してシート状に形成したもののはずれも用いることができる。上記纖維又は親水性纖維としては、木材パルプ等のセルロース纖維、レーヨン、キュプラ等の再生セルロース纖維、ポリビニルアルコール纖維やポリアクリロニトリル纖維等の親水性合成纖維、若しくは、界面活性剤等で纖維表面を親水化したポリエチレン、ポリプロピレン、ポリエチレンテレフタレート、ポリエチレン/ポリプロピレン複合纖維、ポリエチレン/ポリエチレンテレフタレート複合纖維が好ましく、親水性が良好に維持される点からは、セルロース纖維がより好ましい。

【0016】また、高吸収性ポリマーを混合して吸収シートを形成する場合の該高吸収性ポリマーとしては、自重の20倍以上の液体を吸収・保持でき且つゲル化し得

るもののが好ましく、そのような例としては、デンプンや架橋カルボキシメチル化セルロース、ポリアクリル酸及びその塩並びにポリアクリル酸塩グラフト重合体等を挙げることができる。ポリアクリル酸塩としては、ナトリウム塩が好ましく、また、アクリル酸にマレイン酸、イタコン酸、アクリルアミド、2-アクリルアミド-2-メチルプロパンスルホン酸、2-(メタ)アクリロイルエタンスルホン酸、2-ヒドロキシエチル(メタ)アクリレート又はスチレンスルホン酸等のコモノマーを高吸収性ポリマーの性能を低下させない範囲で共重合させた共重合体も好ましい。特に、イオン浸透圧によって大量の液体を吸収保持し且つ吸収した液体が加圧下でも漏れ出さない様な、アクリル酸又はアクリル酸アルカリ金属塩(ナトリウム塩、カリウム塩)等を重合し、架橋して水不溶化させた、水不溶性親水性架橋重合体粒子からなる高吸収性ポリマーが好ましい。

【0017】更に、バインダーを混合して吸収シートを形成する場合の該バインダーとしては、熱溶融性接着繊維又は/及び紙力補強剤を用いることが、湿潤時の強度の点からは好ましい。上記熱溶融性接着繊維としては、加熱により溶融し相互に接着する繊維を用いることができ、具体的には、例えば、ポリエチレン、ポリプロピレン及びポリビニルアルコール等のポリオレフィン系繊維、ポリエステル系繊維、ポリエチレン-ポリプロピレン複合繊維、ポリエチレン-ポリエステル複合繊維、低融点ポリエステル-ポリエステル複合繊維、繊維表面が親水性であるポリビニルアルコール-ポリプロピレン複合繊維、並びにポリビニルアルコール-ポリエステル複合繊維等を挙げることができる。複合繊維を用いる場合には、芯鞘型複合繊維及びサイド・バイ・サイド型複合繊維の何れをも用いることができる。これらの熱溶融性接着繊維は、各々単独で用いることもでき、又は2種以上を混合して用いることもできる。本発明において好ましく用いられる熱溶融性接着繊維としては、熱水で溶解するポリビニルアルコール繊維、芯鞘型のポリエステル繊維等を挙げることができる。またこれらの熱溶融性接着繊維は、一般にその繊維長が2~60mmであることが好ましく、繊維径は0.1~3デニール(特に0.5~3デニール)であることが好ましい。

【0018】上記紙力補強剤としてはポリアミン・エビクロルヒドリン樹脂、ジアルデヒドデンプン、カイメン、カルボキシメチルセルロース等を挙げることができる。

【0019】好ましい上記吸収シートとしては、親水性繊維及び熱溶融性接着繊維または紙力補強剤並びに高吸収性ポリマーとから構成され、上記高吸収ポリマーは、上記吸収シートが液体を吸収する吸収表面には存在せず、該吸収シートの内部に分散配置されており、且つ該吸収シートを構成する親水性繊維に接着し固定化されており、上記高吸収ポリマーの散布坪量は5~300g/

m²であり、上記吸収シートの厚みが0.3~1.5mmである高吸収シートが挙げられる。また、更に好ましい上記吸収シートとしては、嵩高性の親水性繊維及び熱溶融性接着繊維または紙力補強剤から形成された繊維構造体と高吸収性ポリマー粒子とから構成され、上記高吸収性ポリマー粒子は上記吸収シートが液体を吸収する吸収表面には存在せず、上記繊維構造体中に分散固定されており、上記高吸収性ポリマーの散布坪量が20~70g/m²であり、上記吸収シートの厚みが0.3~1.5mmである高吸収シートが挙げられる。

【0020】この様な高吸収シートは、1枚のシート中に高吸収性ポリマーが3次元的に分散・固定されている為に、該高吸収性ポリマーの吸収能が効果的に発揮され、また、ポリマーのゲルロックングも少ない為、体液がスムーズに吸収シート中を伝達し易く、高い吸収能を得る為好ましく使用できる。

【0021】上記表面シート11は、生理用ナプキン10の幅方向における200%伸長時の応力が200~2000gであることが好ましく、500~2000gで

あることがより好ましく、800~2000gであることがより一層好ましい。200g未満では、動作による位相変化がたやすく生じ過ぎて、構成歪みや体液の広がりを生じやすい。2000g超では位相変化が事実上生じない。また表面シート11は、生理用ナプキン10の幅方向における永久歪みが70%以下であることが好ましく、50%以下であることがより好ましい。永久歪みが70%超では位相変化後の復元性に乏しく、構成の永久歪みとなって、繰り返しの位相変化不能でありフィット性を損なう。

【0022】尚、上記幅方向における応力とは、表面シート11を生理用ナプキン10の幅方向に150mm、長手方向に50mmに切断し、テンション引張試験機に試験片の長辺方向端部をチャック間距離100mmで固定し、速度300mm/分で引っ張り、チャック間距離200mmとなった時の応力である。また、上記幅方向における永久歪みとは、表面シート11を生理用ナプキン10の幅方向に150mm、長手方向に50mmに切断し、テンション引張試験機に試験片の長辺方向端部をチャック間距離100mmで固定し、速度300mm/分で引っ張り、チャック間距離200mmとした後、同様の速度(300mm/分)でチャック間距離を100mmとした時の表面シート11の幅方向長さを測定し、初期長さ(チャック間距離=100mm)に対する弛緩できない長さ(初期長さよりも伸びて長くなった部分の長さ)の割合(%)を求めたものである。

【0023】上記表面シート11を形成する材料としては、ポリエチレン(PE)、ポリプロピレン、ポリエステル、PE/PE/T複合繊維等の不織布や、ポリエチレン等のフィルムを開孔したポリエチレン開孔フィルム等を用いることができ、バインダー繊維からなる不織布を

立体的に開孔した開孔不織布や、フィルムを立体的に開孔した開孔フィルムが、伸縮物性を得やすい為好ましい。

【0024】上記粘着部12a, 12aを形成する粘着剤及び剥離紙16としては、従来より用いられているものを特に制限なく用いることができる。

【0025】本実施形態の生理用ナプキン10は、下着に粘着部12a, 12aを粘着固定し、装着者の漏出部に上層吸収体13aを表面シート11を介して当接させた状態で装着する。装着中には、装着者の動作等によって、装着者の漏出部と生理用ナプキン10との間にずれが生じる。即ち、装着者の動作等によって下層吸収体13bに幅方向に力が加わると、下層吸収体13bが幅方向に移動する。そして、表面シート11の連設部11cが下層吸収体13bの移動に応じて変形し、上層吸収体13aの下層吸収体13bに対する幅方向の位相が変化する。その結果、装着者の漏出部に上層吸収体13aが当接された状態は変わることなく保持される。下層吸収体13bへ加わっていた幅方向の力が無くなると、連設部11cに生じている応力によって連設部11cが元の形状に復元され、上層吸収体13aは下層吸収体13bの幅方向中央に配置される。

【0026】また、装着者の動作によって上層吸収体13aに幅方向の力が加わると、上層吸収体13aが下層吸収体13bに対して幅方向に変位する。このとき、上層吸収体13aは、装着者の動作に追従して漏出部に当接したまま変位するので漏れが良好に防止される。上層吸収体13aへ加わっていた幅方向の力が無くなると、連設部11cに生じている応力によって連設部11cが元の形状に復元され、上層吸収体13aは下層吸収体13bの幅方向中央に配置される。

【0027】この様に、本実施形態の生理用ナプキン10によれば、装着者の動作に応じて上層吸収体13aが下層吸収体13bに対して幅方向に変位するので、上層吸収体13aは装着者の漏出部に対して幅方向にずれることなく、体液が確実に上層吸収体13aに吸収され、漏れが良好に防止される。本実施形態の生理用ナプキン10によれば、上層吸収体13aと下層吸収体13bとが同一の表面シート11により被覆されており、装着者の動作等が終了すると上層吸収体13aは下層吸収体13bの幅方向中央に戻るので、体液が左右両側部まで移行し難く、漏れが良好に防止される。本実施形態の生理用ナプキン10によれば、上層吸収体13aが下層吸収体13bよりも幅狭に形成されており、体液は吸収部13の幅方向中央において多量に吸収・保持されるので、体液が左右両側部まで移行し難く、漏れが良好に防止される。

【0028】本実施形態の生理用ナプキン10によれば、表面シート11は、上層吸収体13aを下層吸収体13bに対して上下方向の位相変化自在にも被覆してい

るので、装着者から離れる方向の力が作用しても、装着者の漏出部に上層吸収体13aが当接された状態は保持され、漏れが良好に防止される。本実施形態の生理用ナプキン10によれば、表面シート11が、生理用ナプキン10の幅方向における200%伸長時の応力が200~2000gであり、生理用ナプキン10の幅方向における永久歪みが70%以下であるので、装着者の動作につれて適度に上層吸収体13aの下層吸収体13bに対する位相が適度に変化し、装着者の動作が終了する

10 と良好に位相が元に戻るので、体液が偏らずに吸収され、漏れが一層良好に回避される。本実施形態の生理用ナプキン10によれば、吸収部13の上層吸収体13aが吸収シートを備えているので、高いフィット性を有し、漏れにくくヨレ難い吸収性物品が提供できる。

【0029】図3は、本発明の吸収性物品の第2の実施形態としての生理用ナプキンを示す斜視図、図4は図3の生理用ナプキンの長手方向断面図である。尚、本実施形態において図1及び図2に示す第1の実施形態と同一の部材に関しては同一の符号を付し、説明は省略する。

20 【0030】本実施形態の生理用ナプキン20では、図3又は図4に示すように、上層吸収体23aは、下層吸収体23bと独立して形成され且つ下層吸収体23bと実質的に非接触状態に配設され、下層吸収体23bに対して長手方向に位相変化自在に、表面シート21により被覆されている。また、上層吸収体23aは、1枚のシートを、長手方向に沿って折曲部が配置されるように且つ一方の側縁部を内側に他方の側縁部を外側にして3つ折り形成されて3層に形成されている。下層吸収体23bは、2枚の帯状のシートを積層させて2層に形成されている。上層吸収体23aが表面シート21により下層吸収体23bに対して長手方向に位相変化自在に被覆され、上層吸収体23aが3つ折りにより3層に形成され且つ下層吸収体23bが2枚のシートにより形成されている以外の構成は上述の第1の実施形態と同じである。

30 【0031】本実施形態について詳述すると、表面シート21は、その略中央部が上層吸収体23aに当接されており、更に上記上層吸収体23aの前後端縁に沿って上記上層吸収体23aと下層吸収体23bとの間に折り込まれて、上層吸収体23aにおける下層吸収体23b側の長手方向中央部23a'を除く表面を被覆している。更に、表面シート21は、上層吸収体23aと下層吸収体23bとの間において折り返されて連設部21cが形成され、上層吸収体23aと下層吸収体23bとは、この連設部21cを介して実質的に非接触状態に配設されている。また表面シート21はこの連設部21cから端部21d, 21dにかけてが下層吸収体23bにおける上層吸収体23a側の表面に面接され、下層吸収体23bにおける上層吸収体23a側の長手方向中央部23b'を除く上層吸収体23a側の表面を被覆している。

【0032】上記表面シート21は、生理用ナプキン20の長手方向における200%伸長時の応力が200～2000gであることが好ましい。200g未満では、動作による位相変化がたやすく生じ過ぎて、構成歪みや体液の広がりを生じやすい。2000g超では位相変化が事実上生じない。また、表面シート21の生理用ナプキン20の長手方向における永久歪みは70%以下であることが好ましい。永久歪みが70%超では位相変化後の復元性に乏しく、構成の永久歪みとなって、繰り返しの位相変化不能でありフィット性を損なう。

【0033】尚、上記長手方向における応力とは、表面シート21を生理用ナプキン20の長手方向に150mm、幅方向に50mmに切断し、テンション引張試験機に試験片の長辺方向端部をチャック間距離100mmで固定し、速度300mm/分で引っ張り、チャック間距離200mmとなった時の応力である。また、上記長手方向における永久歪みとは、表面シート21を生理用ナプキン10の長手方向に150mm、幅方向に50mmに切断し、テンション引張試験機に試験片の長辺方向端部をチャック間距離100mmで固定し、速度300mm/分で引っ張り、チャック間距離200mmとした後、同様の速度(300mm/分)でチャック間距離を100mmとした時の表面シート11の幅方向長さを測定し、初期長さ(チャック間距離=100mm)に対する弛緩できない長さ(初期長さよりも伸びて長くなった部分の長さ)の割合(%)を求めたものである。上記表面シート21を形成する材料としては、ポリエチレン(PE)、ポリプロピレン、ポリエステル、PE/PET複合繊維等の不織布や、ポリエチレン等のフィルムを開孔したポリエチレン開孔フィルム等を用いることができる、バインダー繊維からなる不織布を立体的に開孔した開孔不織布や、フィルムを立体的に開孔した開孔フィルムが、伸縮物性を得やすい為好ましい。

【0034】本実施形態の生理用ナプキン20は、下着に粘着部12a、12aを粘着固定し、装着者の漏出部に上層吸収体23aを表面シート21を介して当接させた状態で装着する。装着中には、装着者の動作等によって、装着者の漏出部と生理用ナプキン20との間にずれが生じる。即ち、装着者の動作等によって下層吸収体23bに長手方向に力が加わると、下層吸収体23bが長手方向に移動する。そして、表面シート21の連設部21cが下層吸収体23bの移動に応じて変形し、上層吸収体23aの下層吸収体23bに対する長手方向の位相が変化する。その結果、装着者の漏出部に上層吸収体23aが当接された状態は変わることなく保持される。下層吸収体23bへ加わっていた長手方向の力が無くなると、連設部21cに生じている応力によって連設部21cが元の形状に復元され、上層吸収体23aは下層吸収体23bの長手方向中央に配置される。

【0035】また、装着者の動作によって上層吸収体2

3aに長手方向の力が加わると、上層吸収体23aが下層吸収体23bに対して長手方向に変位する。このとき、上層吸収体23aは、装着者の動作に追従して液漏出部に近接したまま変位するので液漏れが良好に防止される。上層吸収体23aへ加わっていた長手方向の力が無くなると、連設部21cに生じている応力によって連設部21cが元の形状に復元され、上層吸収体23aは下層吸収体23bの長手方向中央に配置される。

【0036】この様に、本実施形態の生理用ナプキン20では、装着者の動作等に応じて上層吸収体23aが下層吸収体23bに対して長手方向に変位する。従って、本実施形態の生理用ナプキン20によれば、該生理用ナプキン20の長手方向に力が加わった場合において、上記第1の実施形態と同様の効果を得ることができる。本実施形態の生理用ナプキン20によれば、吸収部13の上層吸収体23aが吸収シートを備えているので、高いフィット性を有し、漏れにくくヨレ難い吸収性物品が提供できる。

【0037】本発明は上述した実施形態に限定されるものではなく、各部材の具体的な形状や寸法等は、本発明の趣旨を逸脱しない限りにおいて適宜変更可能である。例えば、上記各実施形態において、上層吸収体13a、23a又は/及び下層吸収体13b、23bを、吸収シートに代えて又は吸収シートとともに、吸収パッドによって形成してもよい。また、上層吸収体13a、23a及び下層吸収体13b、23bは、1枚の吸収シートを折り畳んで又は複数枚の吸収シートを積層させて2層、3層またはそれ以上の多数層に形成させたり、1枚の吸収シートで1層に形成させることができる。下層吸収体30の13b、23bと裏面シート12とは、一枚のシート化されていてもよい。

【0038】表面シート11、21は、上層吸収体13a、23aを、下層吸収体13b、23bに対して幅方向又は長手方向に位相変化自在に被覆していればよく、折り畳み形態は特に制限されるものではない。また、上層吸収体13a、23aを、下層吸収体13b、23bに対して幅方向及び長手方向の両方向に位相変化自在に被覆することもできる。表面シート11、21は、上記実施形態の如く、上層吸収体13a、23a及び下層吸収体13b、23bを、幅方向中央部13a'、13b'又は長手方向中央部23a'、23b'を除いて被覆することが好ましいが、上層吸収体13a、23aと下層吸収体13b、23bとの間において当接させ、上層吸収体13a、23a全体及び下層吸収体13b、23bの上層吸収体13a、23a側の面全面を被覆することもできる。吸収部13の側外方に、図2に点線で示す如く裏面シート12の側縁部を延長して防漏壁12'、12'を形成させ、又は液不透過性の防漏材を配置させて、一層確実に液漏れを防止してもよい。この防漏壁12'、12'や防漏材は、吸収部13と表面シ

ート11, 21の間に介在させても、表面シート11, 21の外方に配置させてもよい。

【0039】上記実施形態では生理用ナプキンの場合について説明したが、使い捨ておむつ等の他の吸収性物品でも同様に、下層吸収体と上層吸収体が位相変化自在となって、フィット性を向上させ、漏れを防止できる。

【0040】

【発明の効果】以上説明した様に、請求項1に記載の発明に係る吸収性物品によれば、装着時に装着者の動作等に影響されることなく上層吸収体が装着者の体液漏出部に当接されて良好なフィット性が保持され、液漏れが良好に防止される。

【0041】請求項2に記載の発明に係る吸収性物品によれば、上記請求項1記載の発明効果に加えて、上層吸収体が下層吸収体に対して上下方向の位相変化自在になしてあるので、装着者から離れる方向の力が作用しても、装着者の液漏出部に上層吸収体が当接された状態は保持され、フィット性が良好で、液漏れが一層良好に防止される。

【0042】請求項3に記載の発明に係る吸収性物品によれば、上記請求項1又は請求項2記載の発明の効果に加えて、装着者の動作につれて適度に上層吸収体の下層吸収体に対する位相が変化・復元されるので、フィット性がより良好で、漏れが更に一層良好に回避される。

【0043】請求項4に記載の発明に係る吸収性物品によれば、上記請求項1、請求項2、又は請求項3記載の発明の効果に加えて、上層吸収体が下層吸収体よりも幅狭なので、吸収部を、幅方向中央において従来よりも液吸收容量を多く形成させることができ、側縁部における液漏れが更に良好に防止される。

【0044】請求項5に記載の発明に係る吸収性物品によれば、上記請求項1、請求項2、請求項3、又は請求項4記載の発明の効果に加えて、吸収部の上層吸収体が吸収シートを備えているので、高いフィット性を有し、漏れにくくヨレ難い吸収性物品が提供できる。 *

* 【0045】請求項6に記載の発明に係る吸収性物品によれば、上記請求項5記載の発明の効果に加えて、吸収部の上層吸収体が高吸収性ポリマーを含有する吸収シートを備えているので、加工性が良好であり且つ体液吸収量が多い。

【図面の簡単な説明】

【図1】本発明の吸収性物品の第1の実施形態としての生理用ナプキンを示す斜視図である。

【図2】図1の生理用ナプキンの幅方向断面図である。

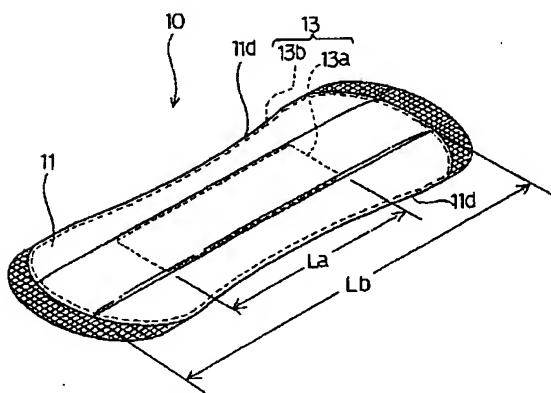
【図3】本発明の吸収性物品の第2の実施形態としての生理用ナプキンを示す斜視図である。

【図4】図3の生理用ナプキンの長手方向断面図である。

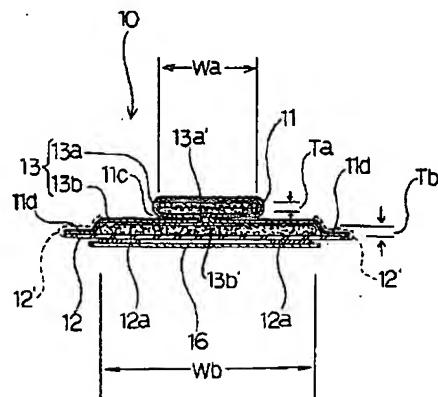
【符号の説明】

| | |
|------|---------|
| 10 | 生理用ナプキン |
| 11 | 表面シート |
| 11c | 連設部 |
| 11d | 側縁部 |
| 12 | 裏面シート |
| 12' | 防漏壁 |
| 12a | 粘着部 |
| 13 | 吸収部 |
| 13a | 上層吸収体 |
| 13a' | 幅方向中央部 |
| 13b | 下層吸収体 |
| 13b' | 幅方向中央部 |
| 16 | 剥離紙 |
| 20 | 生理用ナプキン |
| 21 | 表面シート |
| 21c | 連設部 |
| 21d | 端部 |
| 23a | 上層吸収体 |
| 23a' | 長手方向中央部 |
| 23b | 下層吸収体 |
| 23b' | 長手方向中央部 |

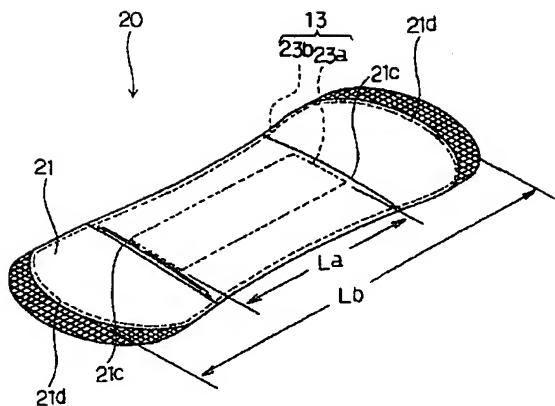
【図1】



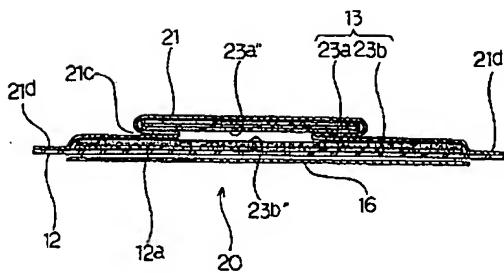
【図2】



【図3】



【図4】



フロントページの続き

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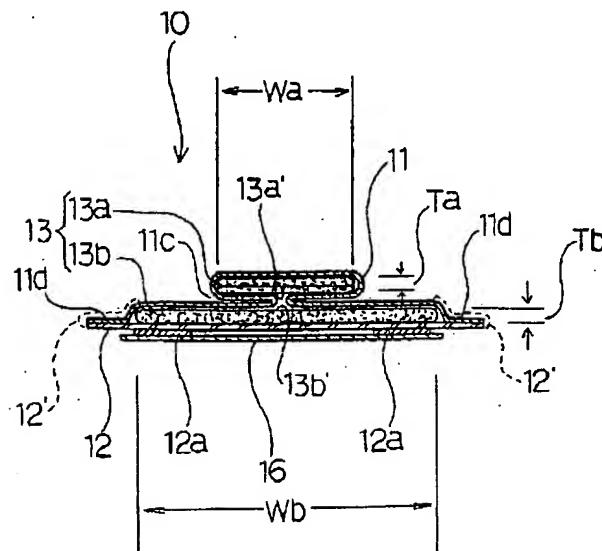
(57) [Abstract]

[Technical problem] Good fit nature should be held without being influenced by actuation at the time of wear, and offer absorptivity goods with a large liquid absorption capacity.

[Means for Solution] They are the absorptivity goods 10 which have the absorption section 13 of liquid holdout which intervened between the surface sheets 11 of liquid permeability, the rear-face sheets 12 of liquid impermeability, and these surface sheets 11 and these rear-face sheets 12 contacted by wearing person. The above-mentioned absorption section 13 is equipped with upper absorber 13a and lower layer absorber 13b arranged in a non-skin contact side side of this upper absorber 13a. This upper absorber 13a It is formed independently with this lower layer absorber 13b, and is substantially arranged by non-contact condition with this lower

layer absorber 13b, and is by the surface sheet 11 free [a phase change] to the above-mentioned lower layer absorber 13b crosswise. It is covered.

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CLAIMS

[Claim(s)]

[Claim 1] Have the following, and this upper absorber is formed independently with this lower layer absorber, and is substantially arranged by non-contact condition with this lower layer absorber. It is characterized by being covered with the above-mentioned surface sheet by the cross direction or longitudinal direction free [a phase change] to the above-mentioned lower layer absorber. Absorptivity goods

which have the absorption section of liquid holdout which intervened between surface sheets of liquid permeability, rear-face sheets of liquid impermeability, and these surface sheets and these rear-face sheets contacted by wearing person. The above-mentioned absorption section is the upper absorber. A lower layer absorber arranged in a non-skin contact side side of this upper absorber

[Claim 2] They are the absorptivity goods according to claim 1 which the surface by the side of the above-mentioned upper absorber except a crosswise center section or a longitudinal direction center section by the side of the surface except a crosswise center section or a longitudinal direction center section by the side of the above-mentioned lower layer absorber in the above-mentioned upper absorber and the above-mentioned upper absorber in the above-mentioned lower layer absorber is covered with the above-mentioned surface sheet, and are characterized by this surface sheet consisting of a continuous sheet of one sheet.

[Claim 3] The above-mentioned surface sheets are absorptivity goods according to claim 1 or 2 characterized by for stress at the time of 200% expanding in the cross direction of absorptivity goods being 200-2000g, and a permanent set in the cross direction being 70% or less.

[Claim 4] Width of face of the above-mentioned upper absorber is absorptivity goods given in either claim 1 characterized by being 20 - 80% of the width of face of the above-mentioned lower layer absorber or thru/or the claims 3.

[Claim 5] The above-mentioned upper absorbers are absorptivity goods given in either claim 1 characterized by having an absorption sheet or thru/or the claims 4.

[Claim 6] The above-mentioned absorption sheets are absorptivity goods according to claim 5 characterized by mixing a sheet which made superabsorbency polymer intervene in the shape of a layer between paper or a nonwoven fabric or hydrophilic fiber and superabsorbency polymer, and a binder, and forming in the shape of a sheet.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] Good fit nature is held in more detail about the absorptivity goods which have the absorption section of the liquid holdout which intervened between surface layers of liquid permeability, such as a sanitary napkin, a disposable diaper, a pad for incontinentia persons, and a pad for surgery, the rear-face layer of liquid impermeability, and this surface layer and this rear-face layer, without being influenced by actuation of a wearing person at the time of wearing, and this invention relates to absorptivity goods with a large liquid absorption capacity.

[0002]

[Description of the Prior Art] The absorptivity goods which generally have the absorption section of the liquid holdout which intervened as absorptivity goods, such as a sanitary napkin and a disposable diaper, between the surface sheet of liquid permeability, the rear-face sheet of liquid impermeability, and this surface sheet and this rear-face sheet are known well. Such absorptivity goods fit the exsorption portion of body fluid, such as blood and urine, good, and not to leak, and to be able to absorb and hold is demanded.

[0003] As absorptivity goods which fit the exsorption portion of body fluid, such as blood and urine, good, and it does not leak, and can be absorbed and held, conventionally, a lower layer absorber and the upper absorber narrower than this lower layer absorber constitute the absorption section, and while avoiding gap by contacting in the configuration suitable for a wearing person's contact section, the thing to which the liquid absorption capacity in a crosswise center section was made to increase is known. As absorptivity goods which made such the absorption section vertical two-layer structure, there are a thing given in JP,5-73419,B and a thing given in JP,5-24025,U. In the absorptivity goods of a publication, the upper absorber and a lower layer absorber are covered with a surface sheet by JP,5-73419,B according to an individual, and each other are being fixed to it in longitudinal direction both ends. In absorptivity goods given in JP,5-24025,U, the upper absorber and a lower layer absorber are covered with a surface sheet according to an individual, and adhesion immobilization is carried out in longitudinal direction both ends and a longitudinal direction center section.

[0004] However, there are the following troubles in the above absorptivity goods. That is, in the absorptivity goods of a publication, by actuation of a wearing person, in a longitudinal direction center section, the relative location of the cross direction of the upper absorber and a lower layer absorber shifts, and it does not return to JP,5-73419,B as it is, but body fluid inclines toward it, and absorption and the case where it is distributed and leakage is produced are in it. In absorptivity goods given in JP,5-24025,U, since the upper absorber and the lower layer absorber are united, when actuation of a wearing person is intense, the whole absorber shifts and there is

a possibility of producing leakage.

[0005] Therefore, good fit nature is held without being influenced by actuation of a wearing person at the time of wearing, and the purpose of this invention is to offer absorptivity goods with a large liquid absorption capacity.

[0006]

[Means for Solving the Problem] In absorptivity goods which have the absorption section of liquid holdout which intervened between surface sheets of liquid permeability, rear-face sheets of liquid impermeability, and these surface sheets and these rear-face sheets with which this invention is contacted by wearing person The above-mentioned absorption section is equipped with the upper absorber and a lower layer absorber arranged in a non-skin contact side side of this upper absorber. This upper absorber It is formed independently with this lower layer absorber, and is substantially arranged by non-contact condition with this lower layer absorber. The above-mentioned purpose is attained by offering absorptivity goods characterized by being covered with the above-mentioned surface sheet by the cross direction or longitudinal direction free [a phase change] to the above-mentioned lower layer absorber.

[0007]

[Embodiment of the Invention] Hereafter, the operation gestalt of the absorptivity goods of this invention is explained concretely, referring to a drawing. The perspective diagram in which drawing 1 shows the sanitary napkin as 1st operation gestalt of the absorptivity goods of this invention, and drawing 2 are the crosswise cross sections of the sanitary napkin of drawing 1 .

[0008] The sanitary napkin 10 of this operation gestalt has the absorption section 13 of the liquid holdout which intervened between the surface sheets 11 of liquid permeability, the rear-face sheets 12 of liquid impermeability, and these surface sheets 11 and these rear-face sheets 12 contacted by the wearing person. About this configuration, it is the same as the conventional well-known technology.

[0009] It **. In the sanitary napkin 10 of this operation gestalt As shown in drawing 1 or drawing 2 , the above-mentioned absorption section 13 It has upper absorber 13a and lower layer absorber 13b arranged in the non-skin contact side side of this upper absorber 13a. This upper absorber 13a It is formed independently with this lower layer absorber 13b, and is substantially arranged by the non-contact condition with this lower layer absorber 13b, and is covered with the above-mentioned surface sheet 11 by the cross direction or the longitudinal direction free [a phase change] to the above-mentioned lower layer absorber 13b.

[0010] A detailed explanation of this operation gestalt forms the above-mentioned upper absorber 13a in two-layer in piles in the absorption sheet of two sheets. Lower layer absorber 13b is formed in one layer with the absorption sheet of one sheet.

[0011] Moreover, the abbreviation center section is contacted by upper absorber 13a, and the surface sheet 11 was further inserted in along with the right-and-left

edges on both sides of the above-mentioned upper absorber 13a between the above-mentioned upper absorber 13a and lower layer absorber 13b, and has covered the surface except crosswise center-section 13a' by the side of lower layer absorber 13b in upper absorber 13a. This surface sheet 11 is turned up between upper absorber 13a and lower layer absorber 13b, successive formation section 11c is formed, and upper absorber 13a and lower layer absorber 13b are substantially arranged by the non-contact condition through this successive formation section 11c. Furthermore, it was interviewed on the surface by the side of upper absorber 13a in ***** absorber 13b, having surface covered [11] it over the side edge sections 11d and 11d from successive formation section 11c, and it has covered the surface by the side of upper absorber 13a except crosswise center-section 13b' by the side of upper absorber 13a in lower layer absorber 13b. In addition, it is contained while it is in a non-contact condition substantially, when it says that it is in a non-contact condition to the degree to which upper absorber 13a and lower layer absorber 13b do not bar a phase change [as opposed to lower layer absorber 13b of upper absorber 13a in "it is substantially arranged by the non-contact condition"], for example, the center section of upper absorber 13a carries out suspension deformation and it contacts lower layer absorber 13b in part.

[0012] And adhesion immobilization of the lower layer absorber 13b is carried out at the rear-face sheet 12, and the surface sheet 11 and the rear-face sheet 12 have fixed in the perimeter of lower layer absorber 13b. In the edge of a sanitary napkin 10, the surface sheet 11 has fixed on the rear-face sheet 12 with the bending condition. Moreover, the two adhesion sections 12a and 12a are formed at a longitudinal direction, and these adhesion sections 12a and 12a exfoliate a releasing paper 16 just before sanitary napkin 10 wearing, expose the adhesion sections 12a and 12a, and are made they to be covered with a releasing paper 16 and to adhere to clothing by applying a binder at that lateral surface at the rear-face sheet 12.

[0013] As for the above-mentioned upper absorber 13a, it is desirable that the width of face Wa is 20 - 80% of the width of face Wb of lower layer absorber 13b, and it is more desirable that it is 30 - 70%. At less than 20%, there is a possibility of shifting from the exsorption section of a wearing person's body fluid, and there is a possibility of spoiling the fit nature to the exsorption section by ** 80%. Moreover, as for the length La of upper absorber 13a, it is desirable that it is 20 - 100% of the length Lb of lower layer absorber 13b. At less than 20%, there is a possibility of shifting from the exsorption section of a wearing person's body fluid. Furthermore, as for thickness Ta of upper absorber 13a, it is desirable that it is 0.3-10mm, and it is more desirable that it is 0.5-6mm. It is because upper absorber 13a is contacted certainly [a wearing person does not have sense of incongruity and] and sufficient liquid absorption capacity is demonstrated.

[0014] although fluff pulp, superabsorbency polymer, paper, a nonwoven fabric, etc. can be especially used without a limit as a material which forms above-mentioned upper absorber 13a and lower layer absorber 13b -- more -- a kink -- hard -- in

order to obtain the high absorptivity goods of absorptivity, it is desirable to come to contain an absorption sheet with a thickness of 0.3-5mm at least. the thickness of less than 0.3mm -- a kink -- easy -- in 5mm **, rigidity is too large and sense of incongruity is given to a wearing person. Moreover, in the 1st operation gestalt shown in drawing 1 , two upper absorber 13a is formed in two-layer in piles in the absorption sheet with a thickness of 0.3-5mm, and lower layer absorber 13b is formed in one layer with one absorption sheet with a thickness of 0.3-5mm.

[0015] What mixed superabsorbency polymer for fiber and was formed in the shape of a sheet from the point that sheets, such as what mixed superabsorbency polymer for an absorbent paper, a nonwoven fabric, the pulp sheet that sheet-sized fiber with the binder etc., fluff pulp, and fiber as an absorption sheet which forms above-mentioned upper absorber 13a and lower layer absorber 13b, and was formed in the shape of a sheet, can be used, and processability and a good body fluid absorbed amount can be obtained is desirable. In addition, ***** can also be used, although superabsorbency polymer mixed the thing and the hydrophilic fiber which were distributed in the shape of a layer, superabsorbency polymer, and a binder and formed in the shape of a sheet between paper or a nonwoven fabric as what mixed superabsorbency polymer for fiber and was formed in the shape of a sheet. As the above-mentioned fiber or hydrophilic fiber, the polyethylene which carried out hydrophilization of the fiber surface with hydrophilic synthetic fibers, such as regenerated-cellulose fiber, such as cellulose fiber; such as wood pulp, rayon, and cuprammonium rayon, vynylon, and polyacrylonitrile fiber, or a surfactant, polypropylene, polyethylene terephthalate, polyethylene / polypropylene bicomponent fiber, and polyethylene / polyethylene terephthalate bicomponent fiber are desirable, and cellulose fiber is more desirable from the point that hydrophilicity is maintained good.

[0016] Moreover, what the absorption and maintenance of the liquid of 20 times or more of a self-weight can be carried out, and can gel it as this superabsorbency polymer in the case of mixing superabsorbency polymer and forming an absorption sheet is desirable, and can mention a polyacrylate graft polymer etc. to starch, a bridge formation carboxymethyl-sized cellulose, polyacrylic acid, and its salt list as such an example. As polyacrylate, sodium salt is desirable and the copolymer which carried out copolymerization of the comonomers, such as a maleic acid, an itaconic acid, acrylamide, 2-acrylamido-2-methyl propane sulfonic acid, 2-(meta) acryloyl ethane sulfonic acid, 2-hydroxyethyl (meta) acrylate, or a styrene sulfonic acid, to the acrylic acid in the range in which the engine performance of superabsorbency polymer is not reduced also has it. [desirable] The superabsorbency polymer which a polymerization is carried out, and the bridge was constructed [polymer] and carried out water insolubilization of an acrylic acid with which the liquid which carried out absorption maintenance and absorbed a lot of liquids with ion osmotic pressure especially does not begin to leak under pressurization, or the acrylic-acid alkali-metal salt (sodium salt, potassium salt) and which consists of a water-

insoluble nature hydrophilicity cross-linked-polymer particle is desirable.

[0017] Furthermore, as this binder in the case of mixing a binder and forming an absorption sheet, it is desirable from the point of the reinforcement at the time of humidity to use thermofusion nature adhesion fiber or/and a paper durability reinforcing agent. The fiber which fuses with heating and is mutually pasted up as the above-mentioned thermofusion nature adhesion fiber can be used, and, specifically, a polyvinyl alcohol-polyester bicomponent fiber etc. can be mentioned to polyolefin fibers, such as polyethylene, polypropylene, and polyvinyl alcohol, polyester fiber, a polyethylene-polypropylene bicomponent fiber, a polyethylene-polyester bicomponent fiber, a low melting point polyester-polyester bicomponent fiber, the polyvinyl alcohol-polypropylene bicomponent fiber whose fiber surface is hydrophilicity, and a list. When using a bicomponent fiber, both a sheath-core mold bicomponent fiber and a side-by-side mold bicomponent fiber can be used. These thermofusion nature adhesion fiber can also be used independently respectively, or two or more sorts can also be mixed and used for it. As thermofusion nature adhesion fiber preferably used in this invention, the vinylon which dissolves with hot water, the polyester fiber of a sheath-core mold, etc. can be mentioned. Moreover, as for these thermofusion nature adhesion fiber, it is desirable that the fiber length is generally 2-60mm, and, as for the diameter of fiber, it is desirable that it is 0.1-3 deniers (especially 0.5-3 deniers).

[0018] As the above-mentioned paper durability reinforcing agent, polyamine epichlorohydrin resin, dialdehyde starch, KAIMEN, a carboxymethyl cellulose, etc. can be mentioned.

[0019] Superabsorbency polymer is consisted of by hydrophilic fiber and thermofusion nature adhesion fiber, or the paper durability reinforcing agent list as the desirable above-mentioned absorption sheet. The above-mentioned high absorption polymer The above-mentioned absorption sheet does not exist in the absorption surface which absorbs a liquid, but is distributed inside this absorption sheet. and the hydrophilic fiber which constitutes this absorption sheet is pasted, and it fixes — having — **** — the spraying basis weight of the above-mentioned high absorption polymer — 5-300g/m² it is — the high absorption sheet whose thickness of the above-mentioned absorption sheet is 0.3-1.5mm is mentioned. furthermore, as the desirable above-mentioned absorption sheet It consists of the fiber structure objects and superabsorbency polymer particles which were formed from the hydrophilic fiber and the thermofusion nature adhesion fiber, or the paper durability reinforcing agent of a loft. The above-mentioned superabsorbency polymer particle does not exist in the absorption surface on which the above-mentioned absorption sheet absorbs a liquid. the above-mentioned fiber structure — distributed immobilization is carried out inside of the body — having — **** — the spraying basis weight of the above-mentioned superabsorbency polymer — 20-70g/m² it is — the high absorption sheet whose thickness of the above-mentioned absorption sheet is 0.3-1.5mm is mentioned.

[0020] The absorbing power of this superabsorbency polymer is demonstrated effectively, and since superabsorbency polymer is being distributed and fixed in three dimension in the sheet of one sheet, since there is also little gel blocking of polymer, body fluid tends to transmit the inside of an absorption sheet smoothly, and since such a high absorption sheet acquires high absorbing power, it can be preferably used for it.

[0021] It is desirable that the stress at the time of 200% expanding in the cross direction of a sanitary napkin 10 is 200-2000g, as for the above-mentioned surface sheet 11, it is more desirable that they are 500-2000g, and it is much more desirable that they are 800-2000g. In less than 200g, the phase change by actuation arises too much easily, and tends to produce the breadth of configuration distortion or body fluid. In 2000g **, a phase change does not arise as a matter of fact. Moreover, as for the surface sheet 11, it is desirable that the permanent set in the cross direction of a sanitary napkin 10 is 70% or less, and it is more desirable that it is 50% or less. In 70% **, it is lacking in the stability after a phase change, and it turns into a permanent set of a configuration, and the phase change of a repeat is impossible for a permanent set, and it spoils fit nature.

[0022] In addition, the stress in the above-mentioned cross direction is the stress when cutting to 150mm crosswise [of a sanitary napkin 10], cutting the surface sheet 11 to 50mm at a longitudinal direction, fixing the direction edge of a long side of a test piece to a tensilon tension tester in the distance between chucks of 100mm, and becoming hauling and the distance between chucks of 200mm by part for 300mm/in speed. With the permanent set in the above-mentioned cross direction, the surface sheet 11 crosswise [of a sanitary napkin 10] Moreover, 150mm, Cut to 50mm at a longitudinal direction, and the direction edge of a long side of a test piece is fixed to a tensilon tension tester in the distance between chucks of 100mm. After considering as hauling and the distance between chucks of 200mm by part for 300mm/in speed, the length [as opposed to / measure the crosswise length of the surface sheet 11 when setting distance between chucks to 100mm at the same speed (a part for 300mm/), and / initial length (distance between chucks = 100mm)] (the length of the portion which the initial length halfbeak was also extended and became long) which cannot loosen -- it asks for (%) comparatively.

[0023] The puncturing nonwoven fabric which punctured the nonwoven fabric which can use nonwoven fabrics, such as polyethylene (PE), polypropylene, polyester, and PE / PET bicomponent fiber, the polyethylene puncturing film which punctured films, such as polyethylene, as a material which forms the above-mentioned surface sheet 11, and consists of binder fiber in three dimensions, and the puncturing film which punctured the film in three dimensions are desirable in order to tend to acquire flexible physical properties.

[0024] As the binder which forms the above-mentioned adhesion sections 12a and 12a, and a releasing paper 16, what is used conventionally can be especially used without a limit.

[0025] The sanitary napkin 10 of this operation gestalt carries out adhesion immobilization of the adhesion sections 12a and 12a at underwear, and equips a wearing person's exsorption section with upper absorber 13a in the condition of having made it contacting through the surface sheet 11. During wearing, a gap arises between a wearing person's exsorption section, and a sanitary napkin 10 by actuation of a wearing person etc. That is, if the force joins lower layer absorber 13b crosswise by actuation of a wearing person etc., lower layer absorber 13b will move crosswise. And successive formation section 11c of the surface sheet 11 deforms according to migration of lower layer absorber 13b, and the phase of the cross direction to lower layer absorber 13b of upper absorber 13a changes. Consequently, the condition that upper absorber 13a was contacted by a wearing person's liquid exsorption section is held, without changing. If the crosswise force in which it had joined lower layer absorber 13b is lost, successive formation section 11c will be restored to the original configuration by the stress produced in successive formation section 11c, and upper absorber 13a will be arranged in the center of the cross direction of lower layer absorber 13b.

[0026] Moreover, if the crosswise force joins upper absorber 13a by actuation of a wearing person, upper absorber 13a will displace crosswise to lower layer absorber 13b. At this time, since upper absorber 13a is displaced following actuation of a wearing person and contacting the liquid exsorption section, a liquid spill is prevented good. If the crosswise force in which it had joined upper absorber 13a is lost, successive formation section 11c will be restored to the original configuration by the stress produced in successive formation section 11c, and upper absorber 13a will be arranged in the center of the cross direction of lower layer absorber 13b.

[0027] Thus, according to the sanitary napkin 10 of this operation gestalt, since upper absorber 13a displaces crosswise to lower layer absorber 13b according to actuation of a wearing person, upper absorber 13a does not shift crosswise to a wearing person's liquid exsorption section, body fluid is certainly absorbed by upper absorber 13a, and a liquid spill is prevented good. Since according to the sanitary napkin 10 of this operation gestalt upper absorber 13a is returned in the center of the cross direction of lower layer absorber 13b after upper absorber 13a and lower layer absorber 13b are covered with the same surface sheet 11 and actuation of a wearing person etc. is completed, body fluid cannot shift easily to the right-and-left both-sides section, and a liquid spill is prevented good. Since according to the sanitary napkin 10 of this operation gestalt upper absorber 13a is formed in narrow rather than lower layer absorber 13b, body fluid is set in the center of the cross direction of the absorption section 13 and it is absorbed and held so much, body fluid cannot shift easily to the right-and-left both-sides section, and a liquid spill is prevented good.

[0028] According to the sanitary napkin 10 of this operation gestalt, since the surface sheet 11 has covered upper absorber 13a also free [the phase change of the vertical direction] to lower layer absorber 13b, even if the force of the direction

which separates from a wearing person acts, the condition that upper absorber 13a was contacted by a wearing person's liquid exsorption section is held, and a liquid spill is prevented good. According to the sanitary napkin 10 of this operation gestalt, the stress at the time of 200% expanding [in / in the surface sheet 11 / the cross direction of a sanitary napkin 10] is 200-2000g. Since the permanent set in the cross direction of a sanitary napkin 10 is 70% or less Since a phase returns good after the phase to lower layer absorber 13b of upper absorber 13a changes moderately along with actuation of a wearing person and actuation of a wearing person is completed, it is absorbed without body fluid inclining and leakage is avoided much more good. since upper absorber 13a of the absorption section 13 is equipped with the absorption sheet according to the sanitary napkin 10 of this operation gestalt -- high fit nature -- having -- leakage -- hard -- a kink -- being hard -- absorptivity goods can be offered.

[0029] The perspective diagram in which drawing 3 shows the sanitary napkin as 2nd operation gestalt of the absorptivity goods of this invention, and drawing 4 are the longitudinal direction cross sections of the sanitary napkin of drawing 3 . In addition, the same sign is attached about the same member as the 1st operation gestalt shown in drawing 1 and drawing 2 in this operation gestalt, and explanation is omitted.

[0030] As shown in drawing 3 or drawing 4 , upper absorber 23a is formed independently with lower layer absorber 23b, and is substantially arranged by the non-contact condition with lower layer absorber 23b, and is covered with the sanitary napkin 20 of this operation gestalt by the longitudinal direction with the surface sheet 21 free [a phase change] to lower layer absorber 23b. Moreover, in the sheet of one sheet, one side edge section is carried out inside, the side edge section of another side is carried out outside, 3 chip-box formation is carried out and upper absorber 23a is formed in three layers so that the bending section may be arranged along with a longitudinal direction. Lower layer absorber 23b carries out the laminating of the band-like sheet of two sheets, and is formed in two-layer. The configuration except upper absorber 23a being covered with the surface sheet 21 by the longitudinal direction free [a phase change] to lower layer absorber 23b, and upper absorber 23a being formed in three layers of 3 chip boxes, and lower layer absorber 23b being formed with the sheet of two sheets is the same as the 1st above-mentioned operation gestalt.

[0031] If this operation gestalt is explained in full detail, the abbreviation center section will be contacted by upper absorber 23a, and the surface sheet 21 would be further inserted in along with the above-mentioned upper absorber 23a order edge between the above-mentioned upper absorber 23a and lower layer absorber 23b, and will have covered the surface except longitudinal direction center-section 23a" by the side of lower layer absorber 23b in upper absorber 23a. Furthermore, the surface sheet 21 is turned up between upper absorber 23a and lower layer absorber 23b, successive formation section 21c is formed, and upper absorber 23a and lower layer

absorber 23b are substantially arranged by the non-contact condition through this successive formation section 21c. Moreover, it was interviewed on the surface by the side of upper absorber 23a in ***** absorber 23b, having surface covered [21] it over Edges 21d and 21d from this successive formation section 21c, and it has covered the surface by the side of upper absorber 23a except longitudinal direction center-section 23b" by the side of upper absorber 23a in lower layer absorber 23b.

[0032] As for the above-mentioned surface sheet 21, it is desirable that the stress at the time of 200% expanding in the longitudinal direction of a sanitary napkin 20 is 200-2000g. In less than 200g, the phase change by actuation arises too much easily, and tends to produce the breadth of configuration distortion or body fluid. In 2000g **, a phase change does not arise as a matter of fact. Moreover, as for the permanent set in the longitudinal direction of the sanitary napkin 20 of the surface sheet 21, it is desirable that it is 70% or less. In 70% **, it is lacking in the stability after a phase change, and it turns into a permanent set of a configuration, and the phase change of a repeat is impossible for a permanent set, and it spoils fit nature.

[0033] In addition, the stress in the above-mentioned longitudinal direction is the stress when cutting to 150mm at the longitudinal direction of a sanitary napkin 20, cutting the surface sheet 21 to 50mm crosswise, fixing the direction edge of a long side of a test piece to a tensilon tension tester in the distance between chucks of 100mm, and becoming hauling and the distance between chucks of 200mm by part for 300mm/in speed. With the permanent set in the above-mentioned longitudinal direction, the surface sheet 21 to the longitudinal direction of a sanitary napkin 10 Moreover, 150mm, Cut to 50mm crosswise and the direction edge of a long side of a test piece is fixed to a tensilon tension tester in the distance between chucks of 100mm. After considering as hauling and the distance between chucks of 200mm by part for 300mm/in speed, the length [as opposed to / measure the crosswise length of the surface sheet 11 when setting distance between chucks to 100mm at the same speed (a part for 300mm/), and / initial length (distance between chucks = 100mm)] (the length of the portion which the initial length halfbeak was also extended and became long) which cannot loosen — it asks for (%) comparatively. The puncturing nonwoven fabric which punctured the nonwoven fabric which can use nonwoven fabrics, such as polyethylene (PE), polypropylene, polyester, and PE / PET bicomponent fiber, the polyethylene puncturing film which punctured films, such as polyethylene, as a material which forms the above-mentioned surface sheet 21, and consists of binder fiber in three dimensions, and the puncturing film which punctured the film in three dimensions are desirable in order to tend to acquire flexible physical properties.

[0034] The sanitary napkin 20 of this operation gestalt carries out adhesion immobilization of the adhesion sections 12a and 12a at underwear, and equips a wearing person's exsorption section with upper absorber 23a in the condition of having made it contacting through the surface sheet 21. During wearing, a gap arises

between a wearing person's exsorption section, and a sanitary napkin 20 by actuation of a wearing person etc. That is, if the force joins lower layer absorber 23b by actuation of a wearing person etc. at a longitudinal direction, lower layer absorber 23b will move to a longitudinal direction. And successive formation section 21c of the surface sheet 21 deforms according to migration of lower layer absorber 23b, and the phase of the longitudinal direction to lower layer absorber 23b of upper absorber 23a changes. Consequently, the condition that upper absorber 23a was contacted by a wearing person's liquid exsorption section is held, without changing. If the force of the longitudinal direction which had joined lower layer absorber 23b is lost, successive formation section 21c will be restored to the original configuration by the stress produced in successive formation section 21c, and upper absorber 23a will be arranged in the center of a longitudinal direction of lower layer absorber 23b.

[0035] Moreover, if the force of a longitudinal direction joins upper absorber 23a by actuation of a wearing person, upper absorber 23a will displace to a longitudinal direction to lower layer absorber 23b. At this time, since upper absorber 23a is displaced following actuation of a wearing person and approaching the liquid exsorption section, a liquid spill is prevented good. If the force of the longitudinal direction which had joined upper absorber 23a is lost, successive formation section 21c will be restored to the original configuration by the stress produced in successive formation section 21c, and upper absorber 23a will be arranged in the center of a longitudinal direction of lower layer absorber 23b.

[0036] Thus, in the sanitary napkin 20 of this operation gestalt, upper absorber 23a displaces to a longitudinal direction to lower layer absorber 23b according to actuation of a wearing person etc. Therefore, according to the sanitary napkin 20 of this operation gestalt, when the force joins the longitudinal direction of this sanitary napkin 20, the same effect as the operation gestalt of the above 1st can be acquired. since upper absorber 23a of the absorption section 13 is equipped with the absorption sheet according to the sanitary napkin 20 of this operation gestalt — high fit nature — having — leakage — hard — a kink — being hard — absorptivity goods can be offered.

[0037] This invention is not limited to the operation gestalt mentioned above, and a concrete configuration, a concrete size, etc. of each part material can be suitably changed, unless it deviates from the meaning of this invention. For example, in each above-mentioned operation gestalt, the upper absorbers 13a and 23a or/and the lower layer absorbers 13b and 23b may be replaced with an absorption sheet, or may be formed with an absorption pad with an absorption sheet. Moreover, the upper absorbers 13a and 23a and the lower layer absorbers 13b and 23b fold up the absorption sheet of one sheet, or carry out the laminating of the absorption sheet of two or more sheets, and it can be made to be able to form in two-layer, three layers, or the a large number layer beyond it, or they can be made to form in one layer with the absorption sheet of one sheet. the lower layer absorbers 13b and 23b and the rear-face sheet 12 -- one sheet -- it may be sheet-ized.

[0038] Especially a folding gestalt is not restricted that the surface sheets 11 and 21 have just covered the upper absorbers 13a and 23a free [a phase change] to the cross direction or a longitudinal direction to the lower layer absorbers 13b and 23b. Moreover, the upper absorbers 13a and 23a can also be covered free [a phase change] in the cross direction and the both directions of a longitudinal direction to the lower layer absorbers 13b and 23b. The surface sheets 11 and 21 like the above-mentioned operation gestalt the upper absorbers 13a and 23a and the lower layer absorbers 13b and 23b crosswise center-section 13a', and 13b' or longitudinal direction center-section 23a, although covering except for ", 23b" is desirable. It can be made to be able to contact between the upper absorbers 13a and 23a and the lower layer absorbers 13b and 23b, and the whole field surface by the side of upper absorber 13a, the whole 23a and upper absorber 13a of the lower layer absorbers 13b and 23b, and 23a can also be covered. To the method of the outside of a side of the absorption section 13, the side edge section of the rear-face sheet 12 is extended, and anti-leak barrier 12' and 12' may be made to form in it, as a dotted line shows to drawing 2, or the **** material of liquid impermeability may be arranged to it, and a liquid spill may be prevented much more certainly to it. Even if it makes this anti-leak barrier 12', 12', and **** material intervene between the absorption section 13 and the surface sheets 11 and 21, they may be arranged to a way outside the surface sheets 11 and 21.

[0039] Although the above-mentioned operation gestalt explained the case of a sanitary napkin, similarly, the phase change of a lower layer absorber and the upper absorber becomes free, and other absorptivity goods, such as a disposable diaper, raise fit nature, and can prevent leakage.

[0040]

[Effect of the Invention] According to the absorptivity goods which were explained above and which are applied to invention according to claim 1 like, without being influenced by actuation of a wearing person etc. at the time of wearing, the upper absorber is contacted by a wearing person's body fluid exsorption section, good fit nature is held, and a liquid spill is prevented good.

[0041] According to the absorptivity goods concerning invention according to claim 2, since the phase change of the vertical direction has made the upper absorber free to the lower layer absorber in addition to the invention effect of the claim 1 above-mentioned publication, even if the force of the direction which separates from a wearing person acts, the condition that the upper absorber was contacted by a wearing person's liquid exsorption section is held, fit nature is good and a liquid spill is prevented much more good.

[0042] According to the absorptivity goods concerning invention according to claim 3, since the phase to the lower layer absorber of the upper absorber is moderately changed and restored along with actuation of a wearing person in addition to above-mentioned claim 1 or an effect of the invention according to claim 2, fit nature is more good and leakage is avoided further much more good.

[0043] According to the absorptivity goods concerning invention according to claim 4, in addition to above-mentioned claim 1, claim 2, or an effect of the invention according to claim 3, since the upper absorber is narrow from a lower layer absorber, it can make many liquid absorption capacity form the absorption section conventionally in the center of the cross direction, and the liquid spill in the side edge section is prevented still better.

[0044] according to the absorptivity goods concerning invention according to claim 5 -- above-mentioned claim 1, claim 2, claim 3, or an effect of the invention according to claim 4 -- in addition -- since the upper absorber of the absorption section is equipped with the absorption sheet -- high fit nature -- having -- leakage -- hard -- a kink -- being hard -- absorptivity goods can be offered.

[0045] Since it has [according to the absorptivity goods concerning invention according to claim 6] the absorption sheet with which the upper absorber of the absorption section contains superabsorbency polymer in addition to the effect of the invention of the claim 5 above-mentioned publication, processability is good and there are many body fluid absorbed amounts.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective diagram showing the sanitary napkin as 1st operation gestalt of the absorptivity goods of this invention.

[Drawing 2] It is the crosswise cross section of the sanitary napkin of drawing 1.

[Drawing 3] It is the perspective diagram showing the sanitary napkin as 2nd operation gestalt of the absorptivity goods of this invention.

[Drawing 4] It is the longitudinal direction cross section of the sanitary napkin of drawing 3.

[Description of Notations]

10 Sanitary Napkin

11 Surface Sheet
11c Successive formation section
11d Side edge section
12 Rear-Face Sheet
12' Anti-leak barrier
12a Adhesion section
13 Absorption Section
13a The upper absorber
13a' Crosswise center section
13b Lower layer absorber
13b' Crosswise center section
16 Releasing Paper
20 Sanitary Napkin
21 Surface Sheet
21c Successive formation section
21d Edge
23a The upper absorber
23a" longitudinal direction center section
23b Lower layer absorber
23b" longitudinal direction center section

[Translation done.]

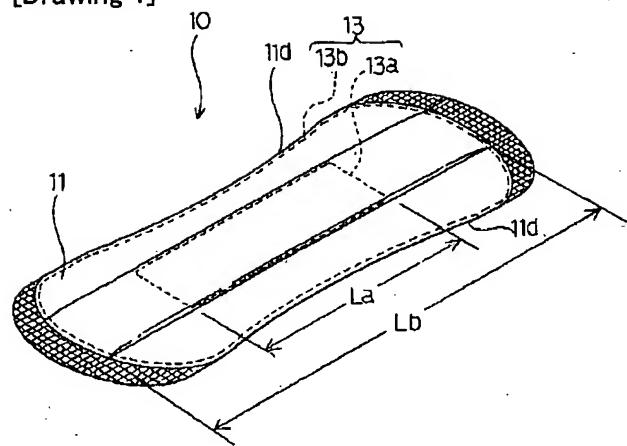
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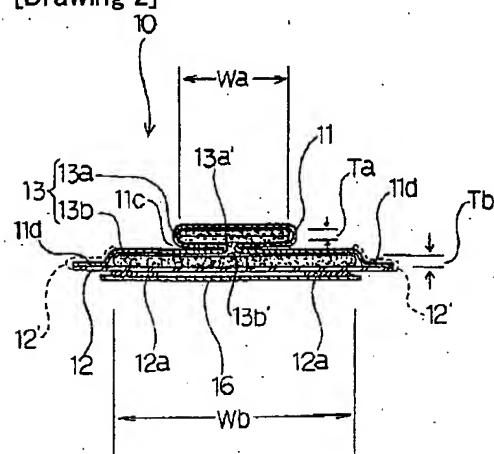
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DRAWINGS

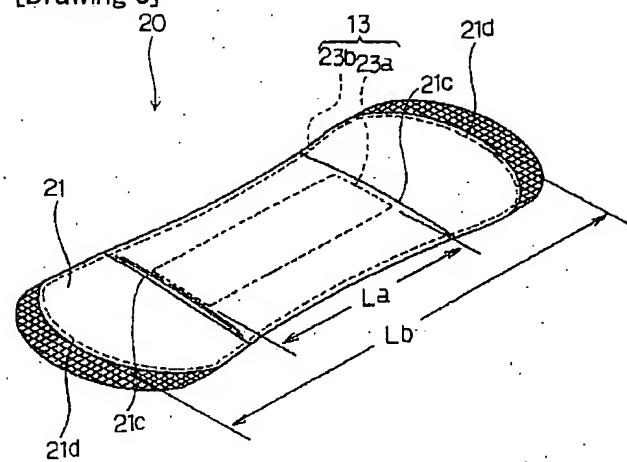
[Drawing 1]



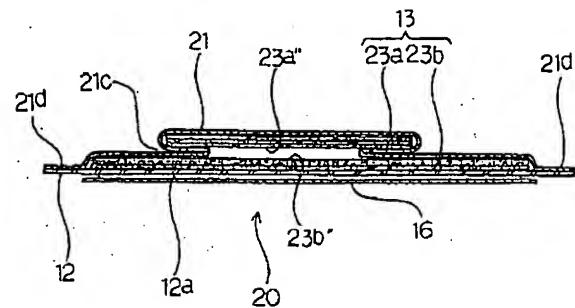
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]